

A BROAD SURVEY OF RESEARCH ON EULERIAN-LAGRANGIAN LOCALIZED ADJOINT METHODS

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The framework of Eulerian-Lagrangian localized adjoint methods(ELLAM) provides a systematic approach for the solution of transient advection-diffusion equations. The ELLAM maintains the accuracy and efficiency of Eulerian-Lagrangian methods, while conserving mass and systematically treating general boundary conditions. The formulation of ELLAM was originally proposed in 1990 by Celia, Russell, Herrera, and Ewing. In this talk, we will survey the development of ELLAM and related works since then, and suggest possible research topics for future research.